

LISTING OF THE CLAIMS

1 (currently amended): A highly corrosion-resistant hot-dip galvanized steel product excellent in surface smoothness and formability, having on the steel product surface a zinc alloy plating layer composed of 4 to 10% by mass of Al, 1 to 5% by mass of Mg, up to 0.1% by mass of Ti and the balance of Zn and unavoidable impurities, the plating layer having a metal structure in which one or more of the [Al phase], [Zn₂Mg phase] and [Zn phase] are present in a mixture in the matrix of an [Al/Zn/Zn₂Mg ternary eutectic structure], and the plating layer containing a Ti-Al base intermetallic compound composed of TiAl₃ in one or more of the [Al phase], [Zn₂Mg phase] and [Zn phase],

wherein the Ti-Al base intermetallic compound contained in an [Al phase] in the plating layer is present in a Zn-Al eutectoid reaction structure in which Zn phases are condensed.

2 (currently amended): A highly corrosion-resistant hot-dip galvanized steel product excellent in surface smoothness and formability, having on the steel product surface a zinc alloy plating layer composed of 4 to 22% by mass of Al, 1 to 5% by mass of Mg, up to 0.1% by mass of Ti, up to 0.5% by mass of Si and the balance of Zn and unavoidable impurities, the plating layer of the plated steel product having a metal structure in which an [Mg₂Si phase], an [Al phase], a [Zn₂Mg phase] and a [Zn phase] are present in a mixture in the matrix of an [Al/Zn/Zn₂Mg ternary eutectic structure], and the plating layer containing a Ti-Al base intermetallic compound composed of Ti (Al_{1-x} Si_x)₃ (wherein X = 0 to 0.5) in one or more of the [Al phase], [Zn₂Mg phase] and [Zn phase],

wherein the Ti-Al base intermetallic compound contained in an [Al phase] in the plating layer is present in a Zn-Al eutectoid reaction structure in which Zn phases are condensed.

Claims 3 to 9: (canceled).

10 (new): A highly corrosion-resistant hot-dip galvanized steel product excellent in surface smoothness and formability, having on the steel product surface a zinc alloy plating layer composed of 4 to 22% by mass of Al, 1 to 5% by mass of Mg, up to 0.1% by mass of Ti, up to 0.5% by mass of Si and the balance of Zn and unavoidable impurities, the plating layer of the plated steel product having a metal structure in which an [Mg₂Si phase], an [Al phase] and a [Zn phase] are present in a mixture in the matrix of an [Al/Zn/Zn₂Mg ternary eutectic structure], and the plating layer containing a Ti-Al base intermetallic compound composed of Ti (Al_{1-x} Si_x)₃ (wherein X = 0 to 0.5) in one or more of the [Al phase] and [Zn phase],

wherein the Ti-Al base intermetallic compound contained in an [Al phase] in the plating layer is present in a Zn-Al eutectoid reaction structure in which Zn phases are condensed.

11 (new): A highly corrosion-resistant hot-dip galvanized steel product excellent in surface smoothness and formability, having on the steel product surface a zinc alloy plating layer composed of 4 to 10% by mass of Al, 1 to 5% by mass of Mg, up to 0.1% by mass of Ti and the balance of Zn and unavoidable impurities, the plating layer having a metal structure in which one or more of the [Al phase], [Zn₂Mg phase] and [Zn phase] are present in a mixture in the matrix of an [Al/Zn/Zn₂Mg ternary eutectic structure], and the plating layer containing a Ti-Al base intermetallic compound composed of TiAl₃ in one or more of the [Al phase], [Zn₂Mg phase] and [Zn phase],

wherein the size of a dendrite in an [Al phase] in the plating layer is up to 500μm.

12 (new): A highly corrosion-resistant hot-dip galvanized steel product excellent in surface smoothness and formability, having on the steel product surface a zinc alloy plating layer composed of 4 to 22% by mass of Al, 1 to 5% by mass of Mg, up to 0.1% by mass of Ti, up to 0.5% by mass of Si and the balance of Zn and unavoidable impurities, the plating layer of the plated steel product having a metal structure in which an $[\text{Mg}_2\text{Si}]$ phase, an $[\text{Al}]$ phase, a $[\text{Zn}_2\text{Mg}]$ phase and a $[\text{Zn}]$ phase are present in a mixture in the matrix of an $[\text{Al}/\text{Zn}/\text{Zn}_2\text{Mg}]$ ternary eutectic structure, and the plating layer containing a Ti-Al base intermetallic compound composed of $\text{Ti}(\text{Al}_{1-x}\text{Si}_x)_3$ (wherein $X = 0$ to 0.5) in one or more of the $[\text{Al}]$ phase, $[\text{Zn}_2\text{Mg}]$ phase and $[\text{Zn}]$ phase,

wherein the size of a dendrite in an $[\text{Al}]$ phase in the plating layer is up to $500\mu\text{m}$.

13 (new): A highly corrosion-resistant hot-dip galvanized steel product excellent in surface smoothness and formability, having on the steel product surface a zinc alloy plating layer composed of 4 to 22% by mass of Al, 1 to 5% by mass of Mg, up to 0.1% by mass of Ti, up to 0.5% by mass of Si and the balance of Zn and unavoidable impurities, the plating layer of the plated steel product having a metal structure in which an $[\text{Mg}_2\text{Si}]$ phase, an $[\text{Al}]$ phase and a $[\text{Zn}]$ phase are present in a mixture in the matrix of an $[\text{Al}/\text{Zn}/\text{Zn}_2\text{Mg}]$ ternary eutectic structure, and the plating layer containing a Ti-Al base intermetallic compound composed of $\text{Ti}(\text{Al}_{1-x}\text{Si}_x)_3$ (wherein $X = 0$ to 0.5) in one or more of the $[\text{Al}]$ phase and $[\text{Zn}]$ phase,

wherein the size of a dendrite in an $[\text{Al}]$ phase in the plating layer is up to $500\mu\text{m}$.